Overview of the SEFSC Sea Turtle Program

NOAA FISHERIES

Southeast Fisheries Science Center

August 25, 2015

Areas of Responsibility

Sea turtle species

Species	ESA Status
Leatherback	Endangered
Loggerhead	Threatened
Kemp's ridley	Endangered
Green	Threatened
Hawksbill	Endangered

Background and Guidance

Goal: Provide best available data to support science-based decisions and recover sea turtle populations

Staff

- SEFSC: 18 FTEs and 7 contractors, 1 Postdoc
- NEFSC: 2 FTE and 1.25 contractors

Legislation

- Endangered Species Act (best available science)
- Magnuson-Stevens (bycatch)

Guidance

- NOAA Next Generation Strategic Plan
- NMFS Strategic Plan
- SEFSC Strategic Plan
- Stock Assessment Improvement Plan
- SEFSC Sea Turtle Strategic Plan

Reviews

- Assessment of Sea-Turtle Status and Trends: Integrating Demography and Abundance (NRC 2010)
- NMFS Sea-Turtle Assessment Status and Research Needs (2013)

Where does science play a role in the Endangered Species Act?

- Data driven population assessments to determine population trends and status
- Identifying and filling data gaps
- Developing novel approaches to answer questions
- NOAA Fisheries Science Center's are positioned to perform assessments and have the expertise to do so

Assessment of Sea Turtle Status and Trends: Integrating Demography and Abundance (NRC 2010)

- Vital rates needed
- Data collection coordination
- Permitting efficiency
- Separate assessments from status and threats evaluations
- Include quantitative scientists
- In-water abundance, hatchling-cohort production, survival rates, age at sexual maturity, breeding rates, and clutch frequency.
- More precise estimates of anthropogenic mortality

NMFS Sea-Turtle Assessment Status and Research Needs (2013)

- In-water surveys (on-water and aerial), sampling, and tagging
- Conduct surveys regularly
- Improve methods for stock determination and estimation of population- or stage-specific abundance, vital rates, and anthropogenic impacts
- Increasing integration of habitat, ecosystem, environmental, and climatic data into analyses
- Improve coverage of lesser-studied species and/or life stages in a given region

NMFS Sea-Turtle Assessment Status and Research Needs (2013)

- Use of novel approaches, advanced technology, and integrated/multi-taxa surveys to reduce costs
- Interagency and international partnerships
- Development of analysis tools to assess anthropogenic impacts
- Improved administration and revision of performance metrics to better reflect data and analysis gaps;
- Develop a consistent reporting mechanism and schedule for assessments
- Capacity building, recruitment, and training.

Stock Assessment Improvement Plan (2004)

Data Categories

- Stock/population identification
- Life history/vital rates
- Abundance (nesting and in-water)
- Anthropogenic impacts
- Assessment frequency and quality

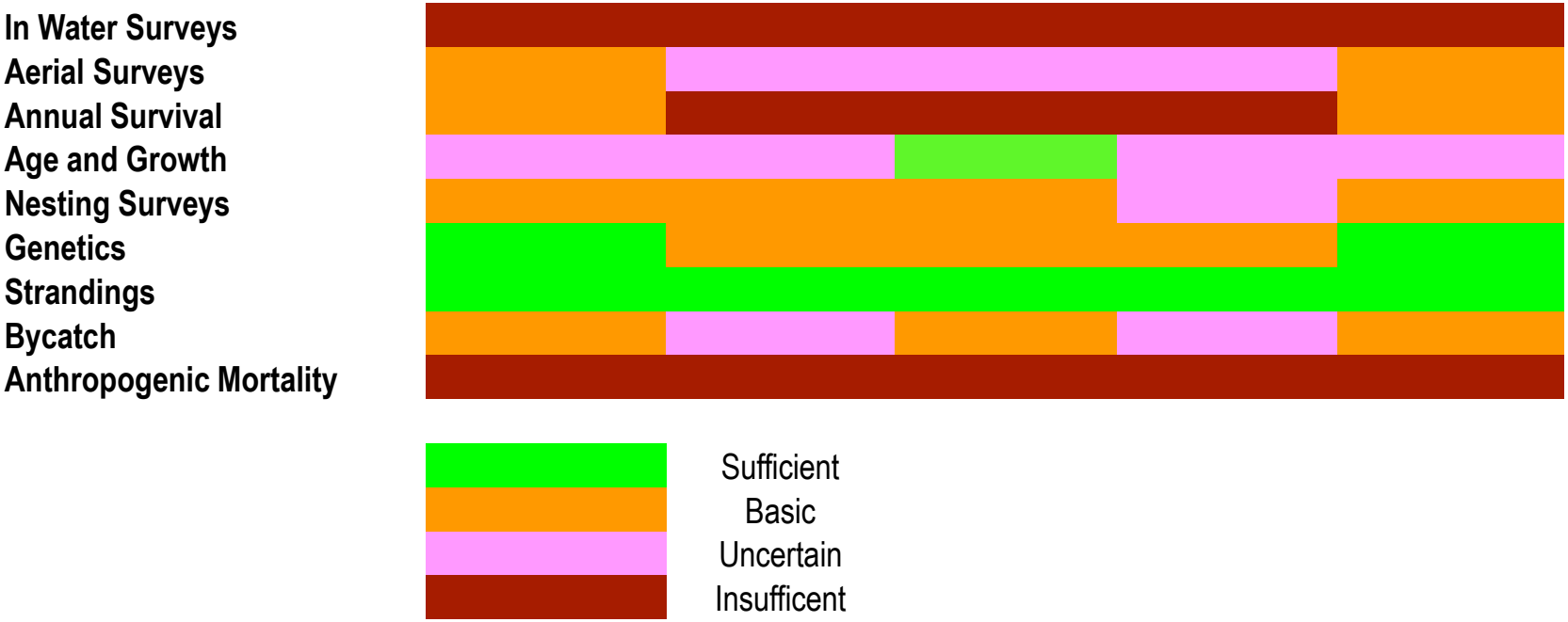
Tiers

- Tier 1 – Status quo, no new assessment information
- Tier 2 – Up-to-date abundance and fisheries bycatch estimates as well as a comprehensive analysis of stock structure
- Tier 3 – Ecosystem based approach to assessments

**All sea turtle species are Tier 1

Critical Issues and Data Gaps

	Loggerhead	Green	Kemp's ridley	Hawksbill	Leatherback
Current Status (Endangered or Threatened)	T	E (proposed T)	E	E	E
Tier Level	1	1	1	1	1
Most Recent Quantitative Assessment	2009				2007
Most Recent Status Review	2009	2015	2007	2013	2013



SEFSC Research Activities

Stock/population identification

- Tissue from strandings, observers, in-water and beach studies

Life history/vital rates

- Age and growth, Survival rates
  - Skeletochronology, mark-recapture, satellite tags

Abundance (nesting and in-water)

- Fishery independent and dependent studies, Aerial surveys, AUV

SEFSC Research Activities

Anthropogenic impacts

- Strandings
- Observer programs
- Bycatch analysis
- Gear development

Assessment frequency and quality

- TEWG
- Quantitative assessments
- Tool box
- ESA recovery plans and status reviews

SEFSC Research Activities

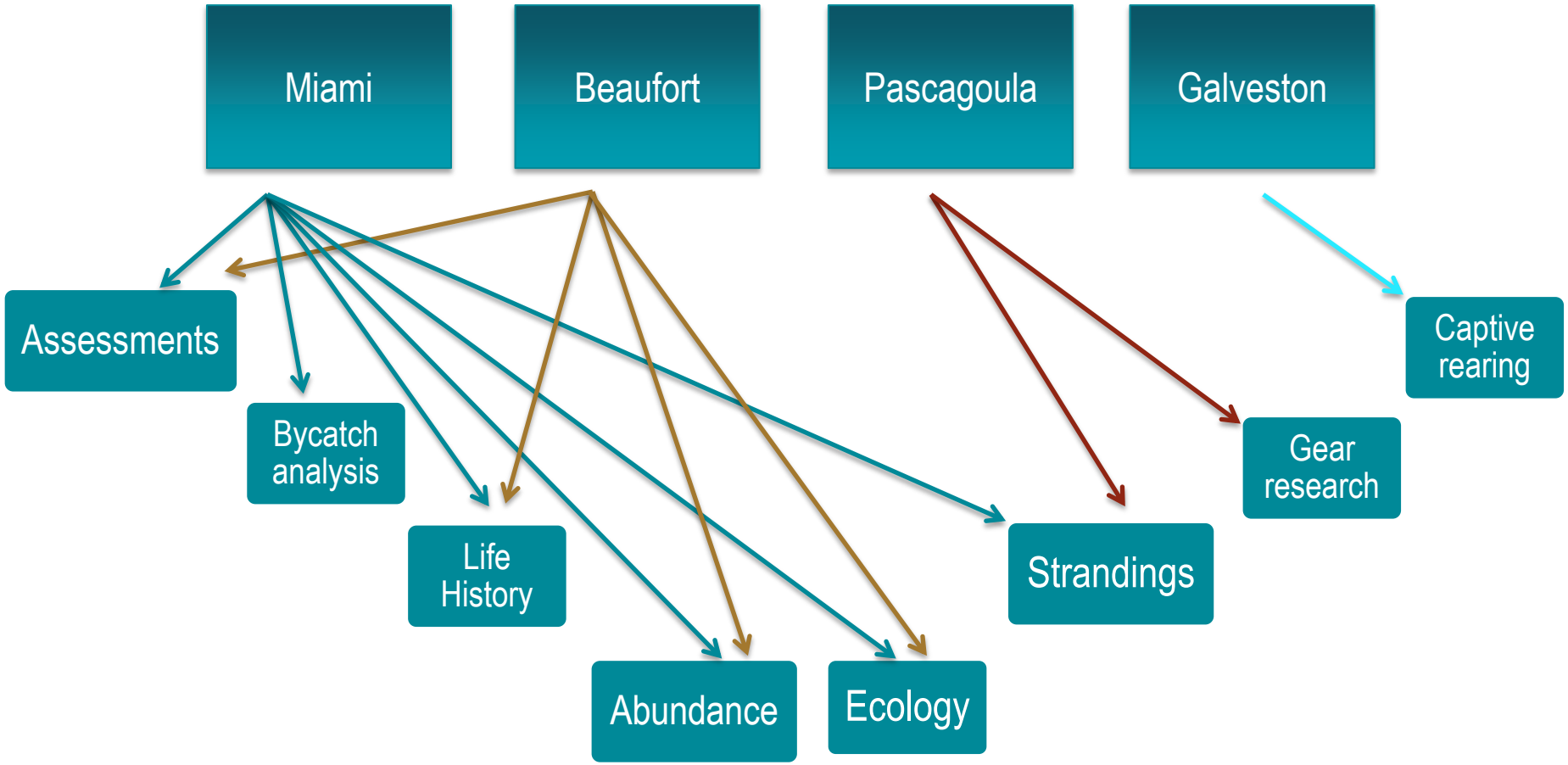
Ecology

- Telemetry
- Stable Isotopes

Data and information dissemination

- Peer-reviewed publications
- NOAA tech memos and reports
- Scientific meetings

Sea Turtle Program Laboratories



Strengths

- Talented staff with diverse skill set
- Collaborations with Federal and State Agencies, Academia, Fishing Industry, and NGOs
- Integrated sea turtle science with NEFSC
- AMAPPS and BOEM funding

Challenges

?

Challenges

- Caribbean largely unknown
- Atlantic vs GOMx issues
- Permitting
- Limited resources
- Funding cycle

Accomplishments

Tool box

- Assessments with NEFSC

Gear research and international outreach

- TED and longline research

In-water monitoring

- NC, Biscayne Bay, West Florida

Tagging studies

- NED survival, leatherbacks in GOMx

Stranding program

- DWH

Presentation Line-Up

- Sea Turtle Data Collection
- Overview of SEFSC Bycatch Reduction Research
- Sea Turtle Stock Assessments - Case Study: Loggerheads
- Research for Conservation: Quantitative Stock Assessments for Sea Turtles
- Sea Turtle Stranding and Salvage Network